

In the Claims

Please amend the claims as follows:

1           1.   (Previously Amended) The structure of a subpipelined  
2 translation embodiment providing binary compatibility between a  
3 base architecture and migrant architecture of a VLIW architecture  
4 comprising:

5           a VLIW architecture comprising a base architecture and a  
6 migrant architecture and having a base execution mode and a migrant  
7 execution mode;

8           an instruction fetch unit for simultaneously fetching from  
9 memory a group of a plurality of instructions, each such group  
10 forming a fetch packet, the fetch packet having an operating mode  
11 in dependence upon the execution mode at the time the request was  
12 made to the memory for the fetch packet;

13           a shared datapath by both the base and migrant architectures  
14 for parsing said base architecture mode and migrant architecture  
15 mode fetch packets into execute packets of instructions within said  
16 fetch packet that can be executed simultaneously;

17           a base architecture control circuit for dispatching execute  
18 packet instructions having a base execution mode;

19           a migrant architecture control circuit for dispatching execute  
20 packet instructions having a migrant execution mode;

21           a base architecture decode connected to said shared datapath  
22 and said base architecture control circuit for decoding an execute  
23 packet in said base mode and generating a corresponding machine  
24 word;

25           a migrant architecture decode connected to said shared  
26 datapath and said migrant architecture control circuit for decoding  
27 an execute packet in said migrant mode and generating a  
28 corresponding machine word;

29 a multiplexer having at least two inputs and one machine word  
30 output wherein one input is the machine word output of said migrant  
31 architecture decode and the other input is the machine word output  
32 of said base architecture decode, said multiplexer choosing in  
33 dependence upon the operating mode of said fetch packet; and  
34 execute hardware connected to said multiplexer for executing  
35 execute packet instructions on execution units corresponding to  
36 said machine word chosen by said multiplexer.

1 2. (Previously Amended) The structure according to Claim 1,  
2 and further comprising a third input to said multiplexer wherein  
3 said third input is a no operation instruction machine word.

1 3. (Original) The structure according to Claim 1, wherein  
2 said machine word also controls registers.

1 4. (Original) The structure according to Claim 1, wherein said  
2 machine word controls a global register file, which supplies  
3 operands to all hardware execution units and accepts results of all  
4 hardware execution units.

1 5. (Original) The structure according to Claim 4, wherein  
2 said machine word controls local register files that supply  
3 operands to either local execution hardware functional units or  
4 neighbor hardware execution functional units subsequent to said  
5 machine word controlling said global register file.

1 6. (Original) The structure according Claim 5, wherein said  
2 machine word controls the various types of execution hardware that  
3 evaluate functions on the operands to produce the results of said  
4 hardware execution units subsequent to said machine word  
5 controlling said local register files.

1           7. (Original) The structure according to Claim 1, wherein the  
2 base and migrant architecture decode units translates opcodes to  
3 the control signals required to execute the specified instructions  
4 on the execution hardware functional units.

1           8. (Original) The structure according to claim 1, and further  
2 comprising said migrant architecture control circuit for issuing  
3 no-operation instruction to preserve the semantics of the  
4 instruction in the migrant architecture.

1           9. (Original) The structure according to Claim 1, wherein  
2 said VLIW architecture is a Digital signal Processor (DSP).

1           10. (Previously Amended) A method of providing binary  
2 compatibility between a base architecture and migrant architecture  
3 of a VLIW architecture comprising the steps of:

4           simultaneously fetching from a memory a group of a plurality  
5 of instructions, each such group forming a fetch packet, the fetch  
6 packet having an operating mode in dependence upon the execution  
7 mode at the time the request was made to the memory for the fetch  
8 packet;

9           parsing said base architecture mode and migrant architecture  
10 mode fetch packets into execute packets of instructions within said  
11 fetch packet that can be executed simultaneously;

12          dispatching execute packet instructions having a base  
13 execution mode;

14          dispatching execute packet instructions having a migrant  
15 execution mode;

16          decoding an execute packet in said base mode and generating a  
17 corresponding machine word;

18        decoding an execute packet in said migrant mode and generating  
19        a corresponding machine word;  
20        choosing one machine word output, in dependence upon the  
21        operating mode of said fetch packet, between the machine word  
22        decoded in said migrant mode and the machine word decoded in said  
23        base mode;  
24        controlling the execution hardware units with said chosen  
25        machine word.

1        11. (Previously Amended) The method according to Claim 10,  
2        and further comprising choosing between the output of said migrant  
3        architecture decode and the output of said base architecture decode  
4        input and a no operation machine word.

1        12. (Original) The method according to Claim 10, and further  
2        comprising controlling registers with said machine word.

1        13. (Original) The method according to Claim 10, and further  
2        comprising controlling a global register file with said machine  
3        word, which supplies operands to all hardware execution units and  
4        accepts results of all hardware execution units.

1        14. (Original) The structure according to Claim 13, and  
2        further comprising controlling local register files that supply  
3        operands to either local execution hardware functional units or  
4        neighbor hardware execution functional units subsequent to said  
5        controlling said global register file.

1        15. (Original) The method according Claim 14, and further  
2        comprising controlling the various types of execution hardware that  
3        evaluate functions on the operands to produce the results of said

4 hardware execution units subsequent to controlling said local  
5 register files.

1 16. (Original) The method according to Claim 10, and further  
2 comprising translating opcodes to the control signals required to  
3 execute the specified instructions on the execution hardware  
4 functional units within the base and migrant architecture decode  
5 units.

1 17. (Original) The method according to claim 10, wherein said  
2 VLIW architecture is a Digital Signal Processor (DSP).

1 18. (Original) The method according to Claim 10 and further  
2 comprising the step of issuing no-operation instruction from said  
3 migrant architecture control circuit, to preserve the semantics of  
4 the instructions in the migrant architecture.